

What Is Claimed Is:

1. An universal power supply apparatus, comprising:

an tip 400 that is attachable and detachable, wherein the
5 tip comprises a select pin 420 for selecting a voltage, a tip
input terminal 410 and a tip output terminal 430;

a main unit 100 having a voltage converter 120, an input
terminal 110, an output terminal 130, and an output select unit
200 for converting a divided value of a reference voltage
10 according to a state of a select stage included in the select
pin 420 of the tip; and

a cable 300 for connecting the tip and the main unit.

2. The universal power supply apparatus as claimed in claim
15 1, wherein the tip 400 is exchanged according to a desired
select voltage.

3. The universal power supply apparatus as claimed in claim
1, wherein the tip 400 further comprises a select information
20 display unit 440 for displaying selection of a tip.

4. The universal power supply apparatus as claimed in claim

3, wherein the select information display unit 440 comprises a numerical information display unit 441 for displaying an adequate shape and voltage to a DC input terminal of an electronic device, and a color information display unit 442 for displaying color.

5. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein a first voltage selected by the change of the select pin is 15 to 16 volts, a second voltage is 18 to 20 volts, and a use power is 60 to 90 watts.

6. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein a first voltage condition selected by the change of the select pin is 4 to 5 volts, a second voltage condition is 9 to 10 volts, a third voltage condition is 12 to 15 volts, and a use power is 5 to 24 watts.

7. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein the universal power supply apparatus operates as a DC/DC adaptor using the DC power as an input power to the main unit 100.

8. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein the universal power supply apparatus operates as an external type battery pack in which a battery 102 and a battery control circuit 103 are connected to
5 the input terminal of the main unit 100.

9. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein the universal power supply apparatus operates as an AC/DC adaptor using the AC power as an
10 input power to the main unit.

10. The universal power supply apparatus as claimed in any one of claims 1 to 4, wherein the voltage converter 120 comprises a PWM control IC 121 being one of components of a SMPS
15 circuit, a FET Q being a switching device, a diode D, an inductor or a transformer L, and condensers Cin and Cout for smoothing voltages at input and output sides.